

## ME 536

### Project-Part I (Due 2/27)

Using various sources, such as journals and online sources, obtain fairly detailed reaction mechanisms for (i)  $\text{H}_2\text{-O}_2$  chemistry and (ii)  $\text{C}_3\text{H}_8\text{-O}_2$  chemistry. Discuss the reaction pathways. As indicated below, Group I is to discuss reaction pathways for  $\text{H}_2\text{-O}_2$  while Group-II for  $\text{C}_3\text{H}_8\text{-O}_2$ .

### Project Part II (Due 3/27)

- (a) Use Oppdif software along with Chemkin libraries to compute the nonpremixed flame structure for (a) strain rate of  $a_s = 50 \text{ s}^{-1}$  and (b)  $a_s = 200 \text{ s}^{-1}$ .
- (b) For each case, plot and discuss the flame structure in terms of spatial coordinate (x) and flame coordinate (mixture fraction).

Note: Group I is to compute the propane-air flame while Group-II is to compute the hydrogen-air flame.

#### Group 1

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#### Group II

Ganguly, Ranjan

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